

WATER BASIS OF DESIGN REPORT
FOR
WINERY SUITES OF SCOTTSDALE
SWC GOLDWATER BOULEVARD & 1ST STREET
SCOTTSDALE, ARIZONA

Prepared for:
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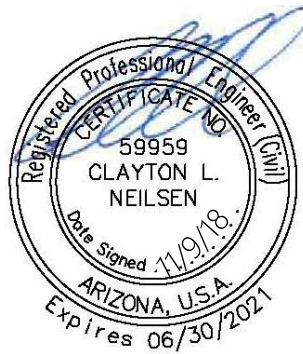
November 9, 2018
Bowman Project No. 050609

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1.0 Introduction

Winery Suites of Scottsdale is a proposed development located at the southwest corner of Goldwater Boulevard and 1st Street. The development is located within a portion of the northeast quarter of Section 27, Township 2 North, Range 4 East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona. The site will consist of 0.39 acres. The site is bounded by 1st Street to the North, Goldwater Boulevard to the East, an alley to the South, and existing properties to the West. A vicinity map is provided in **Appendix A, Figure 1**.

The proposed site consists of the LDV Wine Gallery and Tasting Room and Studio B Interior Design; however, these tenants have since moved to new locations, leaving the current parcels occupied by three dwelling units with flexible lease terms. When redeveloped, the site will consist of approximately 1,500 square-feet of ground-floor retail space and 31 dwelling units with flexible leasing terms in a mid-rise building.

The Winery Suites of Scottsdale is within the jurisdiction of the City of Scottsdale and is designed to comply with the City of Scottsdale drainage policies, as outlined in Chapter 6 of the *City of Scottsdale Design Standards & Policies Manual, 2018* (Reference 1).

The purpose of this report is the following:

- Determine the development's potable water demands and fire flow requirements.
- Show compliance with the City of Scottsdale water design standards (Reference 1).

2.0 Projected Water Demands

2.1 Demand Criteria

In accordance with Figure 6-1.2 of the *Design Standards & Policies Manual* (Reference 1), the average day demand (ADD) for High Density Condominium use is 185.3 gallons per day per dwelling unit.

To determine the maximum day demand (MDD), a peaking factor of 2.0 is multiplied by the ADD.

To determine the peak hour demand (PHD), a peaking factor of 3.5 is multiplied by the ADD.

2.2 Demand Calculations

Average Day Demand

Total ADD = 185.3 gpd/du x 31 du = **5,744 gpd**

Maximum Day Demand

Total MDD = 5,744 gpd x 2.0 = **11,488 gpd**

Peak Hour Demand

Total PHD = 11,488 gpd x 3.5 = **40,208 gpd**

2.3 Fire Flow Requirements

It is anticipated that the building will be Type IIA or IIIA construction and will be approximately 54,000 square feet. According to Table B105.1 (2) of the 2015 International Fire Code (Reference 2), the minimum required fire flow for this building is 3,250 gallons per minute (gpm). When used with fire sprinklers, this amount will be reduced by 50%. The reduced required fire flow is 1,625 gpm.

3.0 Distribution System

The site will connect to the existing water main in the alley to the south of the property with a 2-inch service. Additionally, there will also be a 1-inch irrigation connection made to the same water line.

4.0 Conclusion

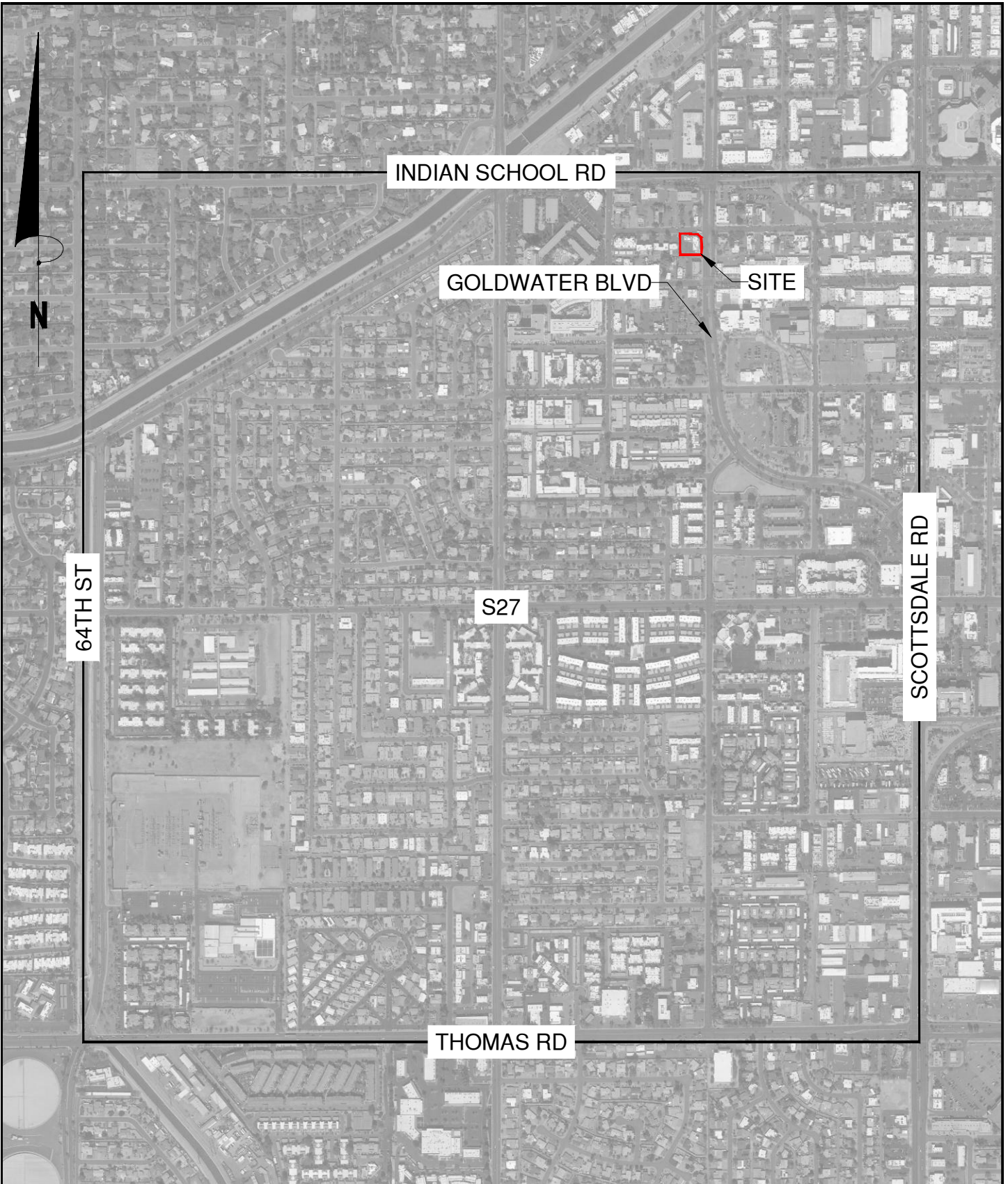
This project will utilize a 2-inch water service to connect to the existing water main in the alley to the south of the property. It is anticipated that the added water demand from the site will adversely affect the surrounding water infrastructure.

5.0 References

1. City of Scottsdale, Design Standards & Policies Manual. 2018.
2. International Code Council. *2015 International Fire Code*. 2016

Appendix A

Exhibits



Bowman
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WINERY SUITES OF SCOTTSDALE
SCOTTSDALE, AZ
VICINITY MAP

JOB #	050609
DATE	11/08/2018
SCALE	N.T.S.
DRAWN	PS
SHT 1 OF 1	

Appendix B

Flow Test Results



Flow Test Summary

Project Name: EJFT 18240
Project Address: 6951 E 1st St, Scottsdale, AZ 85251
Date of Flow Test: 2018-06-14
Time of Flow Test: 7:35 AM
Data Reliable Until: 2018-12-14
Conducted By: Cesar Reyna & Eder Cueva (EJ Flow Tests) 602.999.7637
Witnessed By: Phil Cipolla (City of Scottsdale) 602.828.0847
City Forces Contacted: City of Scottsdale (602.828.0847)
Permit Number: C55627

Note Scottsdale requires a max static pressure of 72 psi for safety factor

Raw Flow Test Data

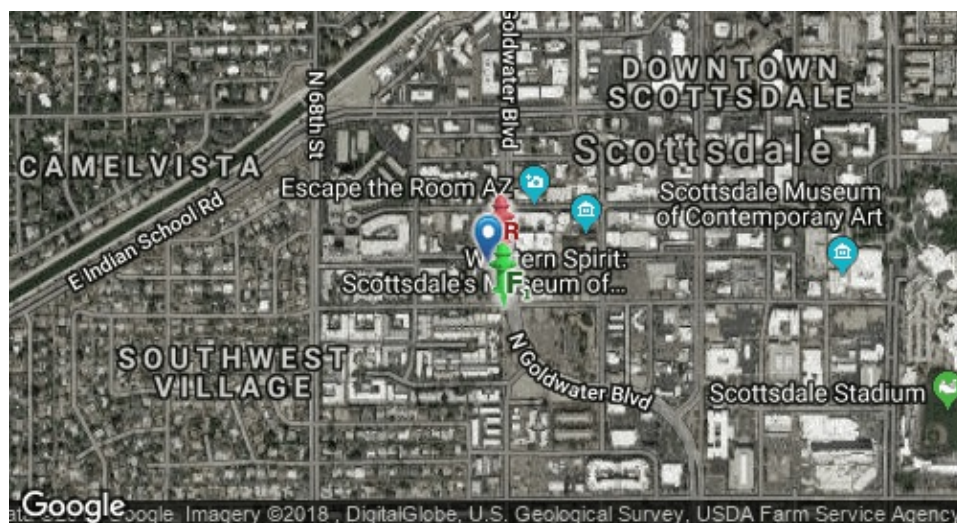
Static Pressure: 83.0 PSI
Residual Pressure: 66.0 PSI
Flowing GPM: 1,986
GPM @ 20 PSI: 4,028

Data with a 11 PSI Safety Factor

Static Pressure: 72.0 PSI
Residual Pressure: 55.0 PSI
Flowing GPM: 1,986
GPM @ 20 PSI: 3,632

Hydrant F₁

Pitot Pressure (1): 31 PSI
Coefficient of Discharge (1): 0.9
Hydrant Orifice Diameter (1): 4 inches
Additional Coefficient 0.83 on orifice #1



- Project Site
- Static-Residual Hydrant
- Flow Hydrant

Distance Between F₁ and R
326 ft (measured linearly)

Static-Residual Elevation
1260 ft (above sea level)

Flow Hydrant (F₁) Elevation
1258 ft (above sea level)

Elevation & distance values are approximate

EJ Flow Tests, LLC

21505 North 78th Ave. | Suite 130 | Peoria, Arizona 85382 | (602) 999-7637 | www.ejengineering.com
John L. Echeverri | NICET Level IV 078493 SME | C-16 FP Contractor ROC 271705 AZ | NFPA CFPS 1915

www.flowtestsummary.com

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Static-Residual Hydrant



Flow Hydrant (only hydrant F1 shown for clarity)



Approximate Project Site



Water Supply Curve $N^{1.85}$ Graph

